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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/589,752

08/17/2006

Ari Kangas

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23117

7590

03/24/2008

NIXON & VANDERHYE, PC
901 NORTH GLEBE ROAD, 11TH FLOOR
ARLINGTON, VA 22203

EXAMINER

NGUYEN, NGA X

ART UNIT

PAPER NUMBER

3662

MAIL DATE

DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/589,752	Applicant(s) KANGAS, ARI	
	Examiner NGA X. NGUYEN	Art Unit 3662	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 39-76 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 39-76 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 August 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>08/17/2006 & 06/19/2007</u> . | 6) <input type="checkbox"/> Other: ____. |

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claim 39-49, 54-62 & 65-73 are rejected under 35 U.S.C. 102(e) as being anticipated by Vannucci (2004/0189515).

With regard to claim 39, 54 & 65, Vannucci discloses:

- Receiving at the mobile terminal, signals from a plurality of satellites (page 2, paragraph 20).
- Measuring at the mobile terminal, pseudoranges to the satellites at time of signal reception (see page 4, paragraph 51-55).
- Calculating the location of the mobile terminal based p representing the measured pseudoranges (see page 4, paragraph 51)
- Determining a quality measure associated with the location calculation (see page 6, paragraph 76-66).
- Recalculating if the quality measure does not fulfill the 1st predefined quality criterion, the location of the mobile terminal with added correction for errors in at least one parameter representing a parameter measured at the mobile terminal (see page 6, paragraph 82).

With regard to claim 40-42, 55-56 & 66-67, Vannucci teaches recalculating step involves correction for errors in a parameter representing a time of signal reception at the mobile terminal and/or parameter representing at least one of the measured pseudoranges and using transmission time offset parameter as an additional unknown parameter (see page 5-6, paragraph 62-68 & 69-80).

With regard to claim 43-49, 57-62, & 68-73, Vannucci teaches recalculating step involves correction for errors in the pseudoranges measured at the mobile terminal through an iterative calculation procedure for pseudoranges outlier correction and further determining and comparing a quality measure of the recalculation (see page 6, paragraph 82-83).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim 50-53, 63-64 & 74-76 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vannucci (2004/0189515) as applied to claim 39 above, and further in view of Geier (20040239558).

With regard to claim 50, 63 & 74, Geier teaches that the quality measure is a measure of the parameter estimate quality determined using the residual of at least squares solution for the mobile terminal location (see page 3, paragraph 26)

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It would have been obvious to modify Vannucci by incorporating the teaching of Geier's system to use least squares solution method so as the receiver performing position information more accuracy.

With regard to claim 51, 64 & 75, Vannucci teaches that the measured pseudorange is a truncated pseudorange, a complete pseudorange from the truncated pseudorange based on a parameter for time of signal reception at the mobile terminal and an approximate mobile terminal location (see page 5, paragraph 66).

With regard to claim 52, Geier teaches:

- Defining a nonlinear equation system with unknown parameters at least for the mobile terminal location and the mobile terminal clock bias (see page 3, paragraph 33-35)
- Linearizing the equation system such that the satellite motion is modeled as linear with a nominal satellite position and a velocity vector (see page 3, paragraph 34).
- Solving the equation system for the mobile terminal location (see page 3, paragraph 36).

With regard to claim 53, Vannucci teaches:

- Determining the nominal position for the respective satellites using a time of satellite transmission determined based on the a measured pseudorange and parameter for time of signal reception at the mobile terminal (see page 3-4, paragraph 39-55).

Geier teaches:

- Expressing the satellite position in local coordinate system with two horizontal and one vertical coordinate (see page 4, paragraph 39-40).

With regard to claim 76, Vannucci teaches determining the location of a mobile terminal in a cellular communication network, the mobile terminal being provided with means for receiving signal from satellites of a satellite-based positioning system (see page 2, paragraph 29).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to NGA X. NGUYEN whose telephone number is (571)272-5217. The examiner can normally be reached on 8:00AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, TARCZA H. THOMAS can be reached on (571) 272-6979. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Examiner
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NXN

/Thomas H. Tarcza/
Supervisory Patent Examiner, Art Unit 3662